

Appln No. 10/800,387
Amdt date May 8, 2007
Reply to Office action of February 20, 2007

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A gray-scale representation method for a plasma display panel, comprising:

arranging, in time sequence, a plurality of subfields each having a brightness weight, and achieving gray-scale representation by a combination of one or more of the plurality of subfields, the gray-scale representation including a plurality of gray scales of increasing value, every two adjacent gray scales including a higher gray scale of a first value and a lower gray scale of a second value, the second value being higher than the first value, each subfield of the plurality of subfields including an address period and a sustain period, an address pulse capable of generating light being provided during the address period and sustain pulses capable of generating light being provided during the sustain period; and

determining the number of sustain pulses for each subfield so that a difference between a light generated from the difference of the number of sustain pulses between two adjacent gray scales can be of the subfields combining to form the higher gray scale and a light generated from sustain pulses of the subfields combining to form the lower gray scale is greater than a light discharged in the generated during one address period [[,]] when [[the]] a number of subfields [[for a]] of the higher gray scale of the two adjacent gray scales is less than ~~that~~ a number of subfields [[for a]] of the lower gray scale of the two adjacent gray scales.

2. (Currently Amended) The gray-scale representation method as claimed in claim 1, wherein the number of sustain pulses of a subfield having a brightness weight of 1 is determined as zero so that a light for a minimum gray scale including ~~subfields~~ the subfield having a brightness weight of 1 ~~may be~~ corresponds to the light discharged in the address period.

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3. (Currently Amended) The gray-scale representation method as claimed in claim 1, wherein the number of sustain pulses for each subfield is determined so as to make the number of sustain pulses ~~for~~ of the subfields combining to form the higher ~~one~~ gray-scale of the two adjacent gray scales equal to ~~that~~ the number of sustain pulses of the subfields combining to form for the lower ~~one of the two adjacent gray scales,~~ gray-scale when the number of subfields for the higher ~~one~~ gray-scale is greater than ~~that for~~ the number of subfields combining to form the lower ~~one~~ gray-scale.

4. (Currently Amended) A gray-scale representation method for a plasma display panel, comprising:

arranging, in time sequence, a plurality of subfields each having a brightness weight, and achieving gray-scale representation by a combination of the ~~respective~~ one or more of the plurality of subfields, each subfield of the plurality of subfields including an address period and a sustain period, an address pulse generating light being provided during the address period and sustain pulses generating light being provided during the sustain period, the gray-scale representation including gray scales ordered from a minimum gray scale value to a maximum gray scale value, a light corresponding to each gray scale including a light discharged during all of the address periods and all of the sustain periods of the subfields combined together to represent the gray scale, between every two adjacent gray scales, one gray scale of the two adjacent gray scales being a lower gray scale corresponding to a lower light and the other gray scale of the two adjacent gray scales being a higher gray scale corresponding to a higher light; and

determining the number of sustain pulses for each subfield so that a light ~~for~~ corresponding to the higher ~~one~~ gray scale of two adjacent gray scales, ~~the light for the higher one of two adjacent gray scales including a light discharged in the whole address period of the subfields combined together to represent the higher gray scale and a light discharged in the whole sustain period, can be~~ is greater than a light for the lower gray scale, ~~the light for the lower~~

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~~gray scale including a light discharged in the whole address period of the subfields combined together to represent the lower gray scale and a light discharged in the whole sustain period, and~~
wherein the number of sustain pulses for each subfield is determined to make the number of sustain pulses for the higher gray scale of the two adjacent gray scales equal to the number of sustain pulses for the lower gray scale when the number of subfields for the higher gray scale is greater than the number of subfields for the lower gray scale.

5. (Currently Amended) The gray-scale representation method as claimed in claim 4, wherein ~~the~~ a number of sustain pulses corresponding to a subfield having a brightness weight of 1 is determined as zero so that a light for a minimum gray scale comprised of the ~~subfields~~ subfield having [[a]] the brightness weight of 1 ~~can be~~ is the light discharged in the address period.

6. (Canceled)

7. (New) A method of gray-scale representation for a plasma display panel, comprising:

arranging a plurality of subfields each having a brightness weight and each including an address period and a sustain period, light being generated during the address period and during the sustain period, the brightness weight corresponding to the light generated during the sustain period, the light generated during the sustain period corresponding to a number of sustain pulses occurring during the sustain period;

obtaining the gray-scale representation from one subfield or from a combination of two or more of the subfields, the one subfield and the two or more of the subfields being selected subfields from among the plurality of subfields, the gray-scale representation including gray scales, each gray scale corresponding to a light generated during the selected subfields, the light generated during the selected subfields including a summation of the light generated during the

address period of each subfield of the selected subfields and the light generated during the sustain period of each subfield of the selected subfields; and

determining the number of sustain pulses occurring during the sustain period of each of the plurality of subfields so that a first light corresponding to a first gray scale value is smaller than a second light corresponding to a second gray scale, the second gray scale being higher than the first gray scale when a number of the selected subfields forming the first gray-scale is smaller than, equal to, or larger than a number of the selected subfields forming the second gray-scale.

8. (New) The method of claim 7,
wherein the second gray scale is consecutive to the first gray scale,
wherein the first gray scale is smaller than the second gray scale,
wherein first selected subfields correspond to the first gray scale,
wherein second selected subfields correspond to the second gray scale,
wherein the second selected subfields include fewer subfields than the first selected subfields, and

wherein a number of sustain pulses being generated during the sustain periods of the second selected subfields is greater than the number of sustain pulses being generated during the sustain periods of the first selected subfields.

9. (New) The method of claim 7,
wherein a first gray scale is smaller than a second gray scale,
wherein the second gray scale is consecutive to the first gray scale,
wherein first selected subfields correspond to the first gray scale,
wherein second selected subfields correspond to the second gray scale,
wherein the second selected subfields include a greater number of subfields as the first selected subfields, and

wherein a number of sustain pulses being generated during the sustain periods of the second selected subfields is equal to the number of sustain pulses being generated during the sustain periods of the first selected subfields.

10. (New) The method of claim 7,
wherein a first gray scale is smaller than a second gray scale,
wherein the second gray scale is consecutive to the first gray scale,
wherein first selected subfields correspond to the first gray scale,
wherein second selected subfields correspond to the second gray scale,
wherein the second selected subfields include a same number of subfields as the first selected subfields, and

wherein a number of sustain pulses being generated during the sustain periods of the second selected subfields is greater than the number of sustain pulses being generated during the sustain periods of the first selected subfields.

11. (New) The method of claim 8,
wherein a light generated during one address period is not greater than a light generated by three sustain pulses,
wherein the second selected subfields include one subfield fewer than the first selected subfields, and

wherein a number of sustain pulses being generated during the sustain periods of the second selected subfields is greater than the number of sustain pulses being generated during the sustain periods of the first selected subfields by at least three.

12. (New) The method of claim 7,
wherein a brightness weight of one corresponds to zero sustain pulses during the sustain period of a subfield having the brightness weight of one,

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wherein the brightness weight of one corresponds to a light generated during the address period of the subfield having the brightness weight of one, and

wherein a minimum gray scale is obtained from the subfield having the brightness weight of one.

13. (New) The method of claim 7, wherein the gray scales vary from 0 to 255.

14. (New) The method of claim 13, wherein the gray scale of 255 corresponds to 509 sustain pulses.